The dark matter constituting approximately 85% of the mass is an integral part of our universe. As many astronomical observations at different scales of space so the theoretical models show that there is more matter than we can see directly. This overview describes the major historical events and observational data from the time of Zwicky to the present leading to today's view on the dark matter. The paper further describes the cosmological implications of the presence of dark matter - its impact on the formation of structures in the universe and reflection of fluctuations in the cosmic background radiation. Here I describe possible candidates for dark matter - a small contribution of baryonic matter and the main candidates among non-baryonic matter. In addition to possible new particles explaining the missing mass I describe alternatives to the theory of gravity, which do not require any extra matter, in particular, I deal with a very successful theory of MOND. At the end I mention a brief overview of today's possibilities of direct or indirect observation of dark matter.